

I claim:

1. A radio signal relay for integrating selected radio signals and extending transmission distances of the selected radio signals comprising a receiver and transmitter, a signal processing unit, an input output bus unit, a processing unit, a memory unit, a signal amplification unit and an antenna, wherein:

the receiver and transmitter receives and transmits the selected radio signals, and isolates the interference of non-selected radio signals;

the signal processing unit processes the signals received by the receiver and transmitter;

the input output bus unit controls data transmission among the units in the radio signal relay, the data including the received radio signals and data in the radio signal relay;

the processing unit controls and coordinates operations of the units in the radio signal relay and performs multiplex processing for the signals;

the memory unit stores selected setting data and programs of the radio signal relay, and temporarily stores the received data signals;

the signal amplification unit processes the radio signals to be relayed in the radio signal relay and furnishes the processed signals for rear end transmitting; and

the antenna receives the selected radio signals and transmits the radio

signals of the radio signal relay.

2. The radio signal relay of claim 1, wherein the signal processing unit performs signal amplification, error detection, and signal transfer for radio signals received from selected radio networks.